## REMARKS

Claim 1 is in the application and is amended herein. Claim 3 is canceled without prejudice or disclaimer. Claims 2 and 4-6 were previously canceled without prejudice or disclaimer. No new claims have been added. Reconsideration and further examination are respectfully requested.

No new matter is believed to have been introduced to the application by this amendment. The changes to the claims are fully supported by the disclosure, including, for example, figure 1, paragraphs [0013], [0014], [0027], [0030], [0032] and [0033], and previously presented claim 1.

### *Claim Rejections – 35 USC § 103*

Claim 1 was rejected under 35 U.S.C. § 103(a) over Japanese Patent No. 62-173,142 (Masahito) in view of Japanese Patent No. 5-200,626 (Shichizawa). Claim 3 was rejected under 35 U.S.C. § 103(a) over Masahito in view of Japanese Patent No. 1-289,624 (Shoji). Reconsideration and withdrawal of these rejections are respectfully requested.

Claim 3 is canceled herein, making the rejection of this claim moot.

As to claim 1, Applicants respectfully assert that the present Office Action fails to establish a prima facie case of obviousness. A proper obviousness rejection requires all of the claim limitations to be considered. MPEP § 2143.03 provides guidance, stating that "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Amended independent claim 1 is directed to a sinker electric discharge machining apparatus for forming a cavity. The apparatus comprises a device for setting a removal surface area (S). The apparatus also comprises an input device for setting a dimension of material to be removed (d) and machining conditions. The apparatus also comprises a storage device for storing a database correlating removal volume rate (Vm) with machining conditions. The apparatus also comprises a calculating device for extracting the removal volume rate (Vm) corresponding to the set machining conditions from the storage device. The calculating device is also for calculating a machining time (T) based on the removal surface area (S), the dimension of material to be removed (d) and the removal volume rate (Vm). The apparatus also comprises a device for completing electric discharge machining of the workpiece with increase in dimension of the cavity when the machining time (T) has elapsed from a start of electric discharge machining.

The applied references are not understood to disclose or suggest the features of claim 1, particularly with respect to at least the following features:

- a device for setting a removal surface area (S);

- an input device for setting a dimension of material to be removed (d) and machining conditions;

- a storage device for storing a database correlating removal volume rate (Vm) with machining conditions; and

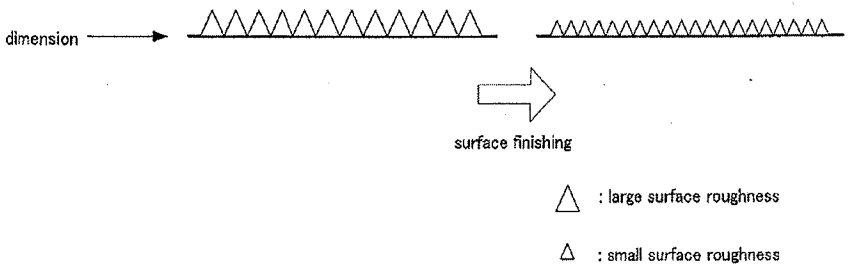
- a device for completing electric discharge machining of the workpiece with increase in dimension of the cavity when the machining time (T) has elapsed from a start of electric discharge machining.

At least these features are neither disclosed nor suggested by Masahito or Shichizawa, whether alone or in combination.

Turning to the applied references, Masahito relates to a machining time estimator for electric discharge machining. The Office Action (at page 4) asserts that the claim language of previously presented claim 1 does not preclude an operator from determining the removal volume mentally and then setting this value into the machine of Masahito. Without conceding the correctness of this rejection, Applicants have amended claim 1 to recite an apparatus performing the features recited in claim 1. Masahito is not seen to teach or suggest the foregoing features of claim 1, particularly a device for setting a removal surface area (S), an input device for setting a dimension of material to be removed (d) and machining conditions, a storage device for storing a database correlating removal volume rate (Vm) with machining conditions, and a device for completing electric discharge machining of the workpiece with increase in dimension of the cavity when the machining time (T) has elapsed from a start of electric discharge machining. The Office Action (at page 3) even concedes that Masahito fails to disclose the feature of completing electric discharge machining when a machining time (T) has elapsed from the start of electric discharge machining.

Shichizawa is not seen to cure the foregoing deficiencies of Masahito. Shichizawa relates to an electric discharge machining apparatus in which "surface finishing" for decreasing surface roughness is completed when a set machining time has elapsed from the start of the surface

finishing. However, as illustrated in the figure to the right, surface finishing of Shichizawa does not increase a dimension of a cavity formed in the




workpiece but simply decreases surface roughness of the cavity. Thus, Shichizawa is not seen to teach or suggest at least the feature of a device for completing electric discharge machining of the workpiece with increase in dimension of the cavity when the machining time (T) has elapsed from a start of electric discharge machining. Furthermore, Shichizawa is not seen to disclose or suggest other features of claim 1, such as: a device for setting a removal surface area (S); an input device for setting a dimension of material to be removed (d) and machining conditions; and a storage device for storing a database correlating removal volume rate (Vm) with machining conditions. Furthermore, Shoji relates to a finishing controller for electrospark machining, and is not seen to cure the deficiencies of the other references.

Accordingly, the applied references, either alone or in combination, are not understood to disclose, teach or suggest the features of independent claim 1, which is therefore believed to be in condition for allowance.

The absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be other reasons for patentability of any or all claims that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this

paper, and the amendment or cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment or cancellation.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience. Applicant's undersigned attorney may be contacted at the address and telephone number set forth below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502203 and please credit any excess fees to such deposit account.

Respectfully submitted,

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